

Serial No. 10/674,092  
Reply to 12/02/05 Non-Final Office Action

Atty Docket No. 70012200.0040.004  
Express Mail Label No. EV 704035208 US

**Amendments to the Drawings:**

The attached sheets of drawings includes changes to Figs. 1, 2, and 5. These sheets replace the original sheets including Figs. 1, 2 and 5.

Attachment: Replacement Sheets  
[Annotated Sheets Showing Changes]

## REMARKS

### Amendments to the Claims

Upon entry of this amendment, claims 1, 2 and 4 will be pending in the above-identified application. Claims 1, 2 and 4 have been amended herein.

Reconsideration and allowance of all claims are respectfully requested in view of the following remarks.

### Amendments to the Drawings

The drawings have been amended to provide labels where necessary. Boxes 16 and 18 in FIG. 1, for example, have been amended to show that they indicate an encoded ring and sensor, respectively. Boxes 12, 20, and 22 have not been labeled as their appearance corresponds substantially to the structural descriptions provided in the specification (e.g. boxes 20 and 22 represent arms, just as they appear in the drawings, and box 12 represents an elevator car). Labeling of sensors has also been added to FIG. 2, and a transponder reader has been labeled in FIG. 5. No new matter has been added. Applicant believes the magnets in FIG. 6 appear appropriately in the figure and are described in the specification. Thus, labeling of these features is not required.

### Rejections Under 35 U.S.C. §112

The Examiner has rejected Claims 1 and 4 under 35 U.S.C. §112, second paragraph, as failing to comply with the written description requirement. The Applicant has amended the specification in order to clarify that one sensor may accomplish all necessary readings and receive information to process from several different targets. Since the claims are part of the specification and this was first disclosed in the claims there is no new matter being added.

In view of the above, Applicants respectfully request that the Examiner withdraw the rejections under 35 U.S.C. §112, second paragraph.

### **Rejections Under 35 U.S.C. §102(b)**

The Examiner has rejected Claim 2 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,128,116, issued to Dobler et al.

The Examiner asserts that Dobler teaches an elevator hoistway position sensor. Dobler, however, teaches an optical method that detects a target attached to the elevator car rail. The optical sensor shines light energy onto the rail and senses a reflection to determine when the elevator car comes in proximity to the optical rail target. Because of the light beam characteristics, the accuracy of optical systems of this type is poor. Also, the coefficient of light reflection of the rail itself is not predictable and such a system is unreliable. Dust and dirt can cause malfunctions in an optical system.

In contrast, the present invention uses magnets and Claim 2 has been amended to incorporate this difference. The magnet sensor is attached to the elevator car rail for sensing door zone, car level, and safe car position for front door opening and safe car position for rear door opening. The magnetic fields are sensed by Hall Effect magnetic sensors. The elevator car position using, Hall Effect sensors, can be determined within a few thousandths of an inch. This precision is possible because of the precision positioning of the hall Effect sensor in relation with the rail and the Hall Effect sensor in relation with the elevator car. These sensors are much safer and more reliable than the optical sensors disclosed by Dobler.

Accordingly, Applicant has amended Claim 2 to recite the difference in using a magnetic field rather than an optical sensor and therefore respectfully requests withdrawal of this rejection.

### Rejections Under 35 U.S.C. §103(a)

The Examiner has rejected Claims 1 and 4 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,134,476, issued to Zolnerovich et al., in view of U.S. Patent No. Patent No. 6,128,116, issued to Dobler et al.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP § 2142.

The Examiner states that Zolnerovich et al. discloses a pulse reader and separate readers that determine the speed etc. and landing/door zones for the control of the elevator car. The Examiner asserts the targets containing coded transmitters specify the landing/door zones and floor location. The Examiner further asserts that in light of Dobler placing the targets in a pocket would have been obvious to one of ordinary skill. There is no suggestion or motivation, in either reference to combine these teachings. The Applicant has amended Claim 1 and 4 herewith to provide that the first and second targets comprise magnets, and that the at least one sensor is capable of sensing a magnetic field. The prior art does not teach all the claim limitations as amended.

Zolnerovich is a hybrid electrical/mechanical system that mimics antiquated methods employed by the mechanical only elevator control systems. The elevator car's velocity is an indirect measurement taken from a sensor attached to the governor cable's sheave installed in the machine room. Elevator car leveling signals are sensed through a complicated system of transmitting and receiving antenna coils (i.e. magnetic radiation). Floor position is tracked

through a series of flip/flops that are activated as the elevator car passes the antenna's radiation. Floor number verification is achieved through a bar card reader. The car code is installed on the elevator hall door and is sensed when the elevator car door is opened and closed. The car code reader's signal is used to correct the car floor position when the system loses track of the elevator car's floor location.

The present invention uses a follower wheel that rides on the face of the rail. The encoder attached to the wheel provides 100 quadrature signal sets for each wheel revolution. By tracking the up and down count values, the host controller continuously knows the car's position within a few thousandths of an inch. The known car's position is verified as the car reaches the landing zone at each floor. The host controller's processor is reading both the leveling signal information as explained herein and the car's quadrature count position. An RFID tag located near the door position may be read by an RFID reader as the car approaches the leveling zone. The reader is attached to the car and provides discrimination of thousands of unique codes that can be used for floor verification and various security purposes. All of the sensors and signals sensed by the system in the present invention are directly sensed signals. No signal is derived or remotely sensed. This system, as outlined, provides precision for car leveling, speed control, and overall elevator safety.

For the reasons discussed above in connection with the 102(b) rejection, Dobler does not teach or suggest the claimed invention. Both Zolnerovich and Dobler fail to teach or suggest the claimed invention. Neither references teaches or suggest at least one magnetic field sensor as claimed by Applicant.

Prima facie obviousness requires that there must be a reasonable expectation of success when prior art is modified or combined. In the present application, there is no reasonable expectation of success in achieving the invention as claimed when the cited references are

modified or combined. As discussed above, neither of the cited references contain all the elements of Applicants' Claims 1 or 4. Unless all the elements are taught by the references, there can be no success in modifying them.

Thus, at the time the present invention was made, neither of the references cited by the Examiner teach or describe *all* of the limitations claimed by Applicant in Claims 1 and 4. Accordingly, Claims 1 and 4 are nonobvious under § 103(a).

### Conclusion

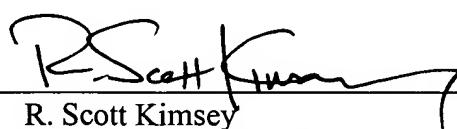
Reconsideration of the application as amended respectfully is requested. The foregoing amendment and remarks are believed to be responsive to every matter raised in the office action. If, however, some matter has been overlooked, an opportunity to correct the oversight would be appreciated. Should any fees be necessitated by this response, the Commissioner is hereby authorized to deduct any such fees from Deposit Account No. 19-3140.

Respectfully submitted,

SONNENSCHEIN NATH & ROSENTHAL LLP

June 2, 2006

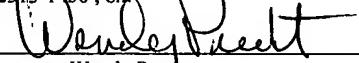
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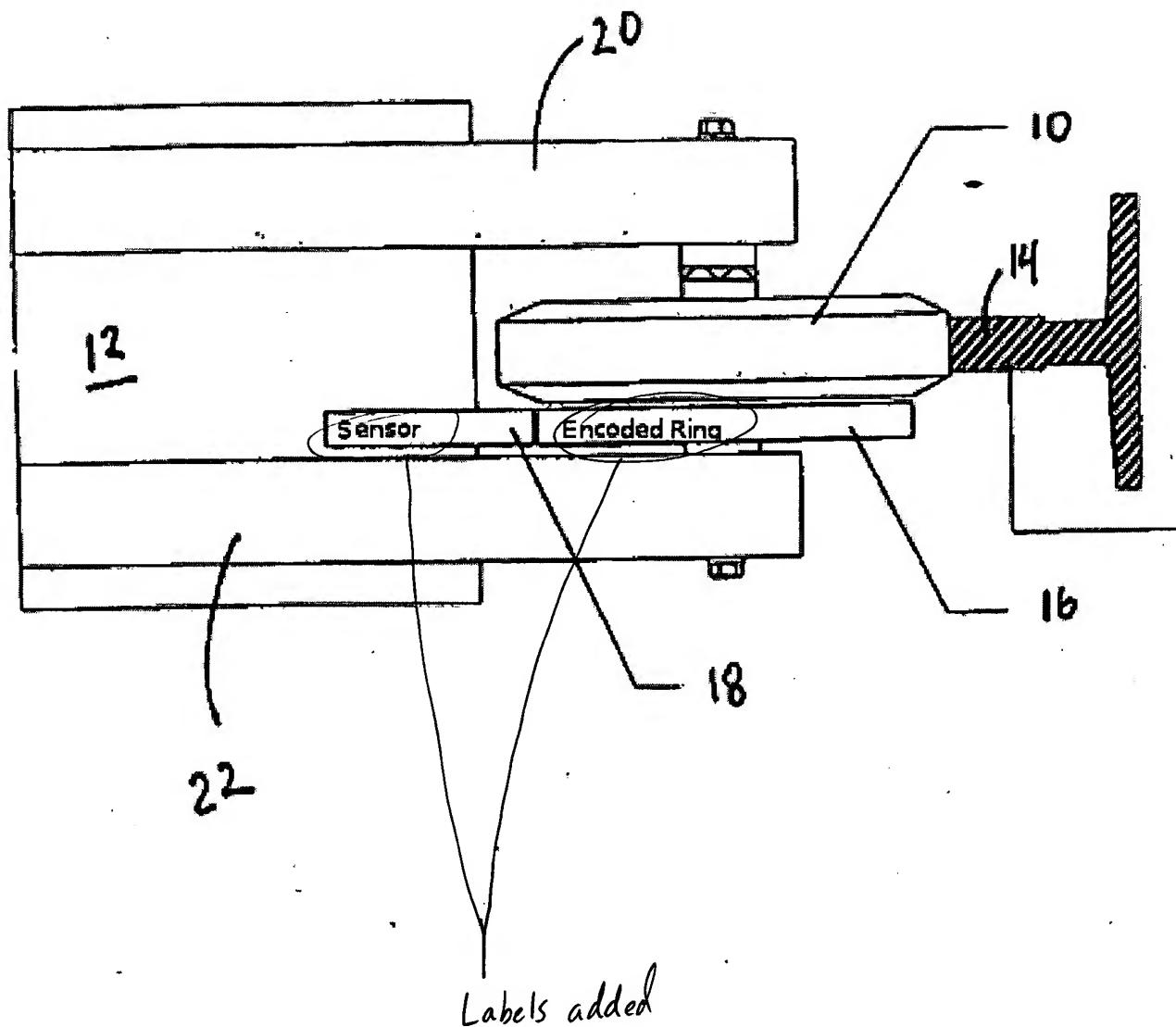
I hereby certify that this document and any being referred to as attached or enclosed is being deposited with the United States Postal Service as Express Mail Post Office to Addressee in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on:

June 2, 2006  
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Wendy Precht  
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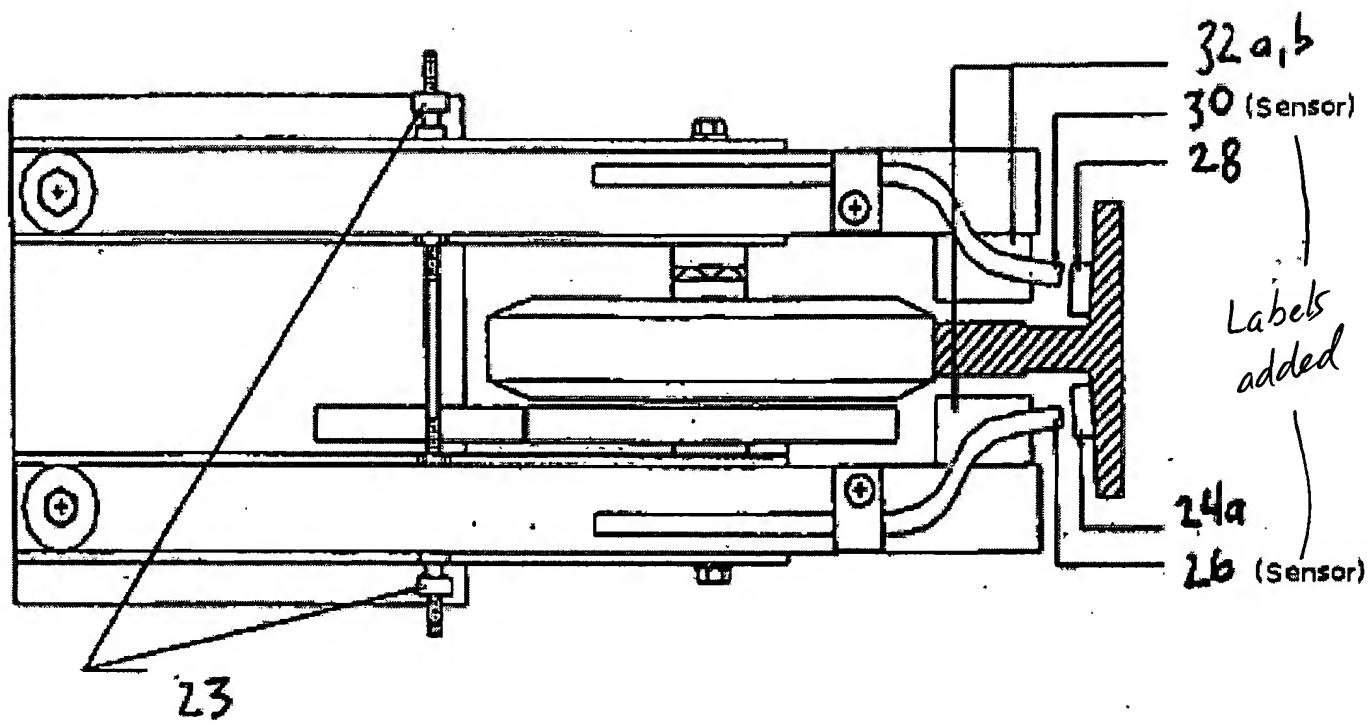
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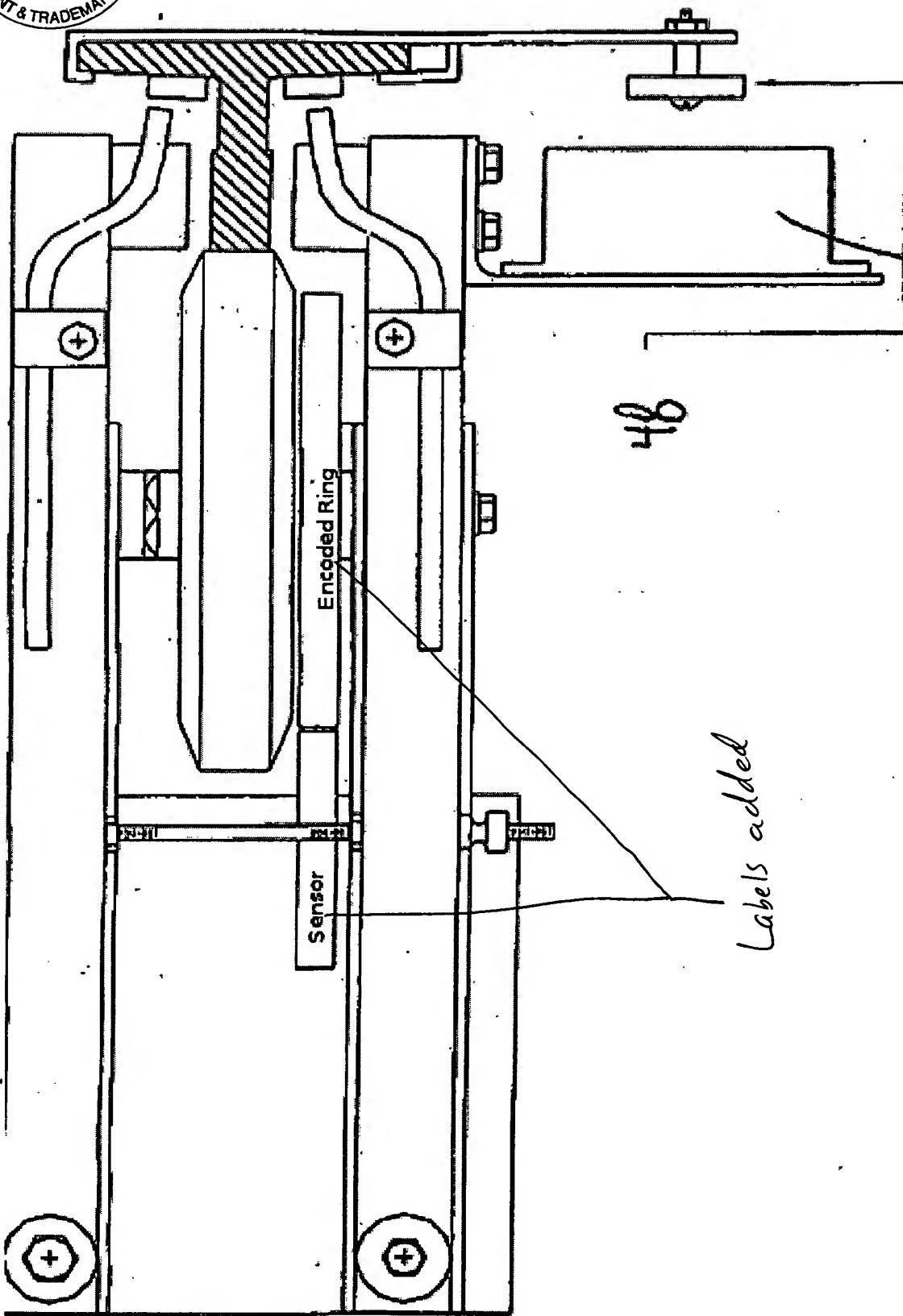
**FIG. 1**



Annotated  
Replacement Sheet



**FIG. 2**



46  
(transponder reader)

FIG. 5